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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/635,945	08/10/2000	Setsuo Nakajima	SEL 203	5934

7590 04/19/2004  
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EXAMINER

HU, SHOUXIANG

ART UNIT PAPER NUMBER

2811

DATE MAILED: 04/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/635,945

Applicant(s)

NAKAJIMA ET AL.

Examiner

Shouxiang Hu

Art Unit

2811

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 26-28 and 30-42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 26-28 and 30-42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Objections*

1. Claims 26-28 and 30-42 are objected to because of the following informalities and/or defects:

In claims 26 and 31, line 4, the term of "said insulating layer" should read as: --said first insulating layer--.

Claims 26-28 and 30-34 each recite "a wiring" and "a storage capacitor wiring", and then recite the term of "said wiring"; but it is not definite regarding which of the two wirings the term of "said wiring" refers to. Accordingly, the terms of "a wiring" and "the wiring" should read as: --a first wiring-- and --the first wiring--, respectively.

In addition, in claims 26-28 and 30-34, the term of "wiring is formed on the second layer comprising the same material as the pixel electrode" should read as: --wiring is formed on the second layer of said input terminal portion--, in order to avoid potential confusion regarding whether the limitation of "comprising the same material as the pixel electrode" is for further defining the wiring or the second layer.

Furthermore, in claims 35-42, the term of "selected" should read as: --is selected--.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 26, 31, 35 and 39 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 26 and 31 each recite the combinations of the subject matters that the recited wiring is formed on the source region, the drain region, and a portion of the pixel electrode; and that the input terminal portion is electrically connected to the recited wiring. However, according to the original disclosure (see Figs. 4A and 4B), there are two separated wirings on the source region (213) and the drain region (214), respectively. And, neither of them is on each and all of the recited region, drain region, and a portion of the pixel electrode; and only the source wiring (above 213) is electrically connected to the input terminal portion (see the bottom paragraph on page 22 of the specification). In addition, it is noted that only a portion of the source wiring is formed on the source region, and only an extended portion of the source wiring is formed on the second layer and connected to the input terminal portion.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 31-34, insofar as being in compliance with 35 U.S.C. 112 and as being best understood in view of the claim objections above, are rejected under 35 U.S.C. 102(b) as being anticipated by Shin (US 5,825,449).

Shin discloses a semiconductor device (Figs. 1a-1f; also see col. 1, lines 34-67), comprising: a substrate (1; glass); a thin film transistor comprising a gate electrode (2), a first insulating layer over the gate electrode, a channel forming region in an amorphous semiconductor layer (4), and doped source and drain regions (5); a second interlayer insulating layer (9; nitride, inorganic); a pixel electrode (6); a storage capacitor wiring ("20" and/or "2D"); and, an input terminal portion including a first layer (2A) comprising the same material as that of the gate electrode (2) and a second layer (a lower portion of layer 6C) comprising the same material as that of the pixel electrode in contact with the first layer through a contact hole formed only in the first insulating layer (26), wherein the gate electrode, the storage capacitor wiring layer and the first layer in the input terminal portion all have a tapered shape and are formed from a same conductive layer; and the storage capacitor wiring and a portion of the pixel electrode, with a portion of the first insulating layer disposed therebetween, inherently form a storage capacitor. And, the device further comprises a (source) wiring (7 and an upper portion of layer 6C), wherein a portion of the wiring (7) is formed over the source region (left side of film 5) and the other portion of the wiring (the upper portion of the layer 6C) is formed on the second layer (the lower portion of the layer 6C).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 39-42, insofar as being in compliance with 35 U.S.C. 112 and as being best understood in view of the claim objections above, are rejected under 35 U.S.C. 103(a) as being unpatentable over Shin.

The disclosure of Shin is discussed as applied to claims 31-34 above.

Although Shin does not expressly disclose that the device can be applied in one of the selected applications as recited in these claims, each of these recited application are art-known applications for an LCD device such as the one of Shin, in order to achieve better display performance with reduced size, as readily evidenced in the prior art such as Ikeda et al. (US 5,428,250; see col.1, lines 16-24).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the semiconductor device of Shin and applied it to one of the art-known applications, so that a better display performance in the application with reduced size would be obtained.

6. Claims 26-28, 30 and 35-38, insofar as being in compliance with 35 U.S.C. 112 and as being best understood in view of the claim objections above, are rejected under

35 U.S.C. 103(a) as being unpatentable over Shin in view of Ikeda et al. ("Ikeda"; US 5,428,250).

The disclosure of Shin is discussed as applied to claim 31-34 and 39-42 above.

Although Shin does not expressly disclose that the storage wiring can be completely covered by the pixel electrode, one of ordinary skill in the art would readily recognize that the storage wiring can be completely covered by the pixel electrode for enhancing the storage capacitance therebetween, as evidenced in Ikeda (see the capacitor line 6 and the pixel electrode 10 in Figs. 6-12).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the semiconductor device of Shin with the storage wiring being completely covered by the pixel electrode, as taught in Ikeda, so that an LCD device with enhanced storage capacitance would be obtained.

### ***Response to Arguments***

7. Applicant's arguments filed on February 13, 2004, have been fully considered but they are not persuasive.

Applicant's main arguments include: the applied prior art references fail to teach the features of the recited wiring. The response to these arguments have been fully incorporated into the claims rejections and claim objections set forth above in this Officer action.

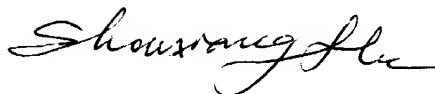
**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shouxiang Hu whose telephone number is 571-272-1654. The examiner can normally be reached on Monday through Thursday, 7:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on 571-272-1732. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SH  
April 15, 2004



**SHOUXIANG HU**  
**PRIMARY EXAMINER**